

## **REMARKS**

In reply to the Office Action mailed April 27, 2005 Applicant requests entry of the amendments listed above and consideration of the following remarks.

### **Amendments to the Specification**

The specification has been amended to better clarify the inventions. In addition, the specification has been amended to remove reference signs not present in drawings, to add reference signs to the description where the reference signs in question are present in drawings or, to eliminate inconsistent usage of reference signs relative to the drawings. The amendments to the specification add no new matter.

### **Drawings**

Corrected drawing sheets appropriately marked "Replacement Sheet" have been provided with respect to Figures 5 and 6 in accordance with 37 C.F.R. 1.121(d). Specifically, the figures have been amended to add reference signs mentioned in the description.

With regard to Examiner's objections to Figure 2, Applicant has amended the specification to make reference to reference character identifiers 225, 227 and 245 used in Fig. 2. (See pages 5 -6, *supra*.)

With regard to Examiner's objections to Figure 4, Applicant notes that Examiner has made an objection with regard to reference character 570, which is not present in Fig. 4. Applicant assumes that Examiner's comments are directed instead to reference character 470. Applicant has amended the specification to add a reference to identifier 470. (See page 6 *supra*.)

With regard to Examiner's objections to Figure 7, Applicant has amended the specification to make reference to reference characters 710, 738, 739, 748, 749, and 770. (See pages 6 - 8 *supra*.)

With reference to Examiner's objections to the drawings as failing to comply with 37 C.F.R. 1.84(p)(5), Applicant has amended the specification to remove the reference to reference character 479. Applicant has also amended Fig. 5, to add reference character 543 to Updated Sales Rate. Applicant has also amended Fig. 6 to add identifier 600 to Digital Processing System.

With reference to Examiner's objections to the drawings as failing to comply with 37 C.F.R. 1.84(p)(4), Applicant has amended the specification to remove references to identifiers 526 and 529. Applicant has also amended the specification to add references to customer interface screen 592 where appropriate. (See pages 9 - 10 *supra*.)

The Amendments to the Specification and Drawings taken together fully address Examiner's objections to the drawings on pages 2, 3, and 4 of the Office Action.

#### **Rejections under 35 U.S.C. 112**

As a preliminary matter, Applicant notes that Examiner has addressed rejections to Claim 16, however there is no claim numbered 16. Applicant presumes that Examiner's comments are directed instead to Claim 17. Applicant's comments below, in traversing Examiner's 35 U.S.C. 112 rejections,

are therefore directed to claim 17 where applicable. Applicant has also amended claims 3, 11, 13, and 17 to clarify and better explain the inventions.

The Examiner has rejected Claims 1,3, 11, 13, 14, and 16 [17] under 35 U.S.C. 112, second paragraph stating that they,

fail to comply with the enablement requirement. The claim(s) contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. [In this regard, Examiner further states that] In independent claims 1, 11 and 14, it is claimed that a variance is calculated for the reported and unreported sales rate of items. However, the reported and unreported sales rate is needed before the variance may be calculated.” [According to the Examiner] This raises a question of enablement because the sales rate must first be determined before calculating a variance. (Office Action, pg. 6).

Applicants respectfully traverse. Examiner’s analysis of the claims and claim language is incorrect for at least the following reasons. Each of the claims represents an embodiment of the invention. Specifically, it is incorrect to read each claim as a step being performed sequentially after the previous claim. Accordingly, Examiner’s reasoning suggesting that the reported and unreported sales rate are somehow calculated in claim 3, after the calculation of variance in claim 1, is both a misreading and a mischaracterization of the claims and claim language. Moreover, Examiner’s statement that the current wording of the claim raises an issue of antecedent basis because “variance cannot be calculated for a sales rate that has yet to be determined” (Office Action, pp. 5 - 6) is also incorrect because Examiner misapplies antecedent basis analysis, as both variance and sales rate have been previously referred to in Claim 1.

Applicant therefore respectfully requests that the claims 1, 3, 11, 14, and 17 be allowed.

**Rejections under 35 U.S.C. 101**

Applicants respectfully traverse all of Examiner's arguments and characterizations because the present invention as recited in the claims has utility and produces a concrete, useful, and tangible result as detailed below.

As a preliminary matter, Applicant notes that Examiner has addressed rejections to Claim 16, however there is no claim numbered 16. Applicant presumes that Examiner's comments are directed instead to Claim 17. Applicant's comments below, in traversing Examiner's 35 U.S.C. 101 rejections, are therefore directed to claim 17 where applicable.

The Examiner rejected claims 1 - 15, 17 -19 under 35 U.S.C. 101 because "the claimed invention lacks patentable utility." According to the Examiner,

The basis of the rejection is set forth in a two-prong test of:  
(1) whether the invention is within the technological arts; and  
(2) whether the invention produces a useful, concrete and tangible results.

For a claimed invention to be statutory, the claimed invention must be in the technological arts ...

Thus, the claimed invention as a whole fails the usefulness test of the two-prong test and claims 1-13 are deemed to be directed to non-statutory subject matter. (Office Action, pg. 7).

Applicants respectfully traverse. The Examiner cites no statutory authority or legal precedent for the "two-prong" test enunciated above. According to the Federal Circuit, the proper inquiry under 35 U.S.C. § 101 is to determine whether the claim includes recitations that produce "a concrete, tangible and useful

result.” See *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998); *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358 (Fed. Cir. 1999). If so, the claim is not abstract and has practical utility (*Id.*), and, if the claim is not abstract and has practical utility, it is statutory under 35 U.S.C. § 101. *Id.*; see also, M.P.E.P. § 2106(IV)(B)(2)(b)(ii) (8<sup>th</sup> Ed., Rev. 2, May 2004) (“A claim is limited to a practical application [i.e., is directed to statutory subject matter,] when the method, as claimed, produces a concrete, tangible and useful result; i.e., the method recites a step or act of producing something that is concrete, tangible, and useful.”).

Claim 1 recites, “A machine readable medium having stored thereon instructions, which when executed by a processor, cause the processor to perform the following:

- calculating a first variance for a reported sales rate of an item;
- calculating a second variance for an unreported sales rate of the item;
- generating a first probability distribution for reported sales, during a delay time, of the item;
- generating a second probability distribution for unreported sales of the item based on an update time of a ready to sell parameter; and
- performing a convolution of the first and second probability distributions to obtain a probability of an availability of the item at an expected time of transaction.”

The inventory level at the time the customer chooses to purchase Y is a random variable. Product availability is the probability that Y is positive and may be derived, for example, from two other random variables: (1) X1, representing reported sales that occur between the time the customer researches online and the time of purchase, and (2) X2, representing unreported sales that may result from inaccuracies in a retailer's inventory records. Then,

$$Y = \text{Current inventory} + \text{Scheduled shipments} - (X1 + X2).$$

Convolution is a mathematically correct way to obtain the probability distribution for a random variable Y that depends on the sum of two random variables X1 + X2.

Therefore, one concrete and tangible effect of "performing a convolution of the first and second probability distributions" is that it permits a retailer "to obtain a probability of an availability of the item at an expected time of transaction ." Thus, the convolution produces a concrete, tangible, and useful result because, *inter alia*, the convolution aids a seller or retailer in deciding whether to inform a customer of the "availability of the item at an expected time of transaction" as recited in Claim 1.

Thus, Claim 1, contrary to the Examiner's characterization produces at least one useful, concrete and tangible result, and is allowable.

Claims 2 -13 depend from claim 1 and are allowable for at least the same reasons.

Further the Examiner states that,

Claims 1, 11, and 14 involve the step of performing a convolution of probability distributions to obtain a probability of item availability.

The applicant has also failed to disclose why convolution was chosen over other known means (such as weighted averages). There are also no steps to ensure the accuracy, reliability or validity of the data used. Also there is no mentioning as to why a convolution of probabilities is needed to make the probability of item availability more accurate. (Office Action, pg. 8).

In Claim 1, an embodiment is disclosed wherein “a convolution of the first and second probability distributions to obtain a probability of an availability of the item at an expected time of transaction” is performed. The Examiner’s request for Applicant “to disclose why convolution was chosen over other known means” is unsupported by any statutory or legal basis and Applicant respectfully requests that the request be withdrawn.

Furthermore, Examiner opines incorrectly that, “There are also no steps to ensure the accuracy, reliability or validity of the data used. Also there is no mentioning as to why a convolution of probabilities is needed to make the probability of item availability more accurate” (Office Action, pg. 8) without providing any substantive reasons for his opinion and without specifying the “data” to which the Examiner refers. Therefore, Applicant respectfully requests that Examiner’s comments be withdrawn.

With respect to claim 14, the Examiner states that the “recited method of calculating a variance and generating a probability distribution of reported and unreported sales to perform a convolution to obtain a probability of item availability does not apply, involve or use the technological arts since all of the recited steps can be performed by use of a pencil and paper.” (Office Action, pg. 9).

Applicants respectfully traverse. Again, Examiner's attention is drawn to arguments advanced above and to the Federal Circuit's decisions in *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998); *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1358 (Fed. Cir. 1999), as noted above. Notwithstanding Examiner's incorrect interpretation of 35 U.S.C. 101, Applicant has amended Claim 14, to advance prosecution of this application.

Therefore, Claims 14 - 18 are allowable.

In view of the foregoing, Applicant therefore respectfully submits that claims 1 - 15, 17 -19 are allowable and pending in the application.

#### **Rejections under 35 U.S.C. 103**

As a preliminary matter, Applicant notes that Examiner has addressed rejections to Claim 16, however there is no claim numbered 16. Applicant presumes that Examiner's comments are directed instead to Claim 17. Applicant's comments below, in traversing Examiner's 35 U.S.C. 103 rejections, are therefore directed to claim 17 where applicable.

The Examiner rejected Claims 1 - 15 and 17 - 19 as allegedly rendered obvious by PG Gupta (PG Pub US2003/0074349 A1). Specifically, Examiner has stated that Gupta teaches the calculation of

a variance on data on reported sales (product order data). Gupta does not teach the step of calculating a variance for unreported sales. However, given that merchandise exits a store's inventory by a plurality of reasons other than sales (theft, clerical error, spoilage...) other sources of inventory depletion need to be accounted for. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the teachings of Gupta to



include unreported sales in accounting for sales for the reasons discussed above therein. (Office Action, pg. 10).

Applicant respectfully disagrees. Examiner concedes that Gupta does not teach the step of calculating a variance for unreported sales (Office Action pg. 10, ¶1). Further, Examiner concedes that Gupta does not teach the generation of probability distributions of reported or unreported sales (Office Action pg. 10, ¶2). Examiner also concedes that Gupta does not teach the step of convolution of probability distributions of reported and unreported sales (Office Action pg. 10, ¶3).

Examiner's sole bases for claiming obviousness relate to Examiner's observation that "merchandise exits a store's inventory for a variety of reasons other than sales," and because the mathematical step of "convolution is old and well known in the art," therefore Examiner argues, "it would have been obvious to one of ordinary skill in the art to perform a convolution of probability distributions of sales to determine the probability of an item being available in light of the combined probability of an item being sold (either reported or unreported)" (Office Action, pg. 10).

Applicant notes that the Examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the Examiner does not produce a prima facie case, the Applicant is under no obligation to submit evidence of non-obviousness. See M.P.E.P. § 2142, (8<sup>th</sup> Ed., Rev. 2, May 2004).

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary

skill in the art, to modify the reference or to combine reference teachings.

Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. See M.P.E.P. § 2143, (8<sup>th</sup> Ed., Rev. 2, May 2004).

As the Examiner notes, Gupta fails to teach or suggest the calculation of a variance of unreported sales, and the generation and convolution of probability distributions of reported or unreported sales. Moreover, the mere fact that merchandise exits a store's inventory for a variety of reasons other than sales, is insufficient in and of itself to suggest a mechanism for modeling such unreported sales. In this context, Applicant notes specifically that Gupta does not model nor suggest a method for modeling unreported sales. Furthermore, the Examiner fails to substantiate the assertion that "it would have been obvious to one of ordinary skill in the art to perform a convolution of probability distributions of sales to determine the probability of an item being available" by the provision of appropriate references suggesting such an approach. Accordingly, Examiner has failed to meet his burden of establishing a prima facie case of obviousness with respect to claim 1, because the Examiner has not provided prior art references teaching or suggesting all of the claim limitations, nor provided a motivation to modify the teachings based on disclosures in the prior art. Therefore claim 1 is not rendered obvious by Gupta.

Accordingly, Applicant respectfully requests the allowance of claim 1.

Claims 11 and 14 have been rejected by Examiner "by the same rationale", as was claim 1. Therefore, Applicant respectfully submits that the claims 11 and 14 are also allowable for at least the same reasons as is claim 1.

Claims 3 -10 depend from claim 1 and are therefore allowable for at least the same reasons as is claim 1.

Claims 12 - 13 depend from claim 11 and are therefore allowable for at least the same reasons as is claim 11.

Claims 15 and claims 17- 19 depend from claim 14 and are therefore allowable for at least the same reasons as is claim 14.

Therefore, claims 1 - 15 and 17 - 19 are pending and under consideration.

In light of the foregoing distinctions, the instant claims are not rendered obvious by Gupta. Applicants thus respectfully request that these rejections be withdrawn.

### **Conclusion**

As a result of this Amendment, claims 1 -15, and 17 - 19 are currently pending. The following remarks are submitted to be fully responsive to the Office Action. Reconsideration of this application in light of these remarks and allowance of this application is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON,  
FARABOW, GARRETT & DUNNER,  
L.L.P.

Dated: July 27, 2005

By: 

Venk Krishnamoorthy, Ph.D.  
Reg. No. 52,490